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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,598	09/08/2003	Klaus Nieding	KOA 0238 PUS (R 1341)	2094
22045	7590	06/03/2004	EXAMINER	
BROOKS KUSHMAN P.C. 1000 TOWN CENTER TWENTY-SECOND FLOOR SOUTHFIELD, MI 48075			MILLER, TAKISHA S	
			ART UNIT	PAPER NUMBER
			2855	

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/657,598	Applicant(s) NIEDING ET AL.	
	Examiner Takisha Miller	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/8/03; 9/22/03</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruge (2,403,952) in view of Nicot (6,402,196).

- a. With respect to claims 1, 5 and 6, Ruge teaches a torsion module comprising a "second" ring/end plate (13), a spoked wheel (Fig. 1) attached on a bottom side to the ring (13), the spoked wheel having a hub (1), a rim (2), and bending spokes (3) which join the rim (2) to the hub (1), the bending spokes (3) being bendable in the event of a rotation angle offset between the hub (1) and the rim (2) in response to a torque being applied (Col. 1, lines 43-49). A measuring sensor (5) placed on at least one of the bending spokes (3), the measuring sensor (5) being operable for generating a signal as a function of a bending force experienced by the at least one of the bending spokes (3) as the at least one of the bending spokes (3) bends in response to a rotation angle offset between the hub (1) and the rim (2). The spoked wheel further having bending-resistant limit stop spokes (17, 18) placed alternately between the bending spokes (3), each bending-resistant limit stop spoke (17) having a free end that protrudes radially from the hub (1) towards the rim (2), the free ends of the bending-resistant limit stop spokes (18) being engaged with respective regions of the rim (2) in such a manner as to permit a rotational angle

offset between the hub (1) and the rim (2) while limiting the maximum rotation angle offset between the hub (1) and the rim (2)(Col. 2, lines 31-38). The hub (1), the rim (2), the bending spokes (3), and the bending-resistant limit stop spokes (17,18) of the spoked wheel being concentric to one another (Fig.1). The ring having inward-pointing projections (Fig.2). Ruge lacks teaching a “first” spacer ring attachable to a steering wheel and the “second” ring being part of a base plate of the steering wheel. Nicot teaches a first ring (14a) attachable to a steering wheel (5)(Fig.2) and a second ring (40) being part of a base plate (12) of the steering wheel (5)(Fig.8). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ruge to include the limitation above as taught by Nicot in order to provide a relatively simple, compact and yet highly sensitive and accurate torquemeter adapted to employ strain responsive means in the steering wheel art (see Nicot; Col. 1, lines 8-14 and Ruge; Col. 1, lines 5-9).

- b. With respect to claim 2, Ruge teaches a torsion module wherein the measuring sensors (5) include strip strain gauges (Fig.2).
- c. With respect to claim 3, Ruge teaches a torsion module wherein the strain gauges (5) are placed on different sides of the bending spokes (3)(Fig.1)(Col. 2, lines 2-5).
- d. With respect to claim 4, Ruge teaches a torsion module wherein the rim (2) and the bending-resistant limit stop spokes (17/18) are placed such that they are located in one plane and have the same extent in the axial direction (Fig.1).
- e. With respect to claims 7 and 8, Ruge teaches a torsion module wherein each region of the rim (2) engaged with a free end of a bending-resistant limit stop spoke

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(17/18) includes a limit stop arrangement having two bulges (Fig.1) that are separated at a distance from each other leaving a limit stop gap (Fig.1).

f. With respect to claim 9, Ruge teaches a torsion module comprising a spoked wheel but lacks teaching the spoked wheel insertable into a recess of a steering wheel. Nicot teaches a spoked wheel (7) insertable into a recess (12b) of a steering wheel (5)(Fig.8). Regarding the shape of the recess, i.e. having an inward-directed projection, are only considered to be obvious modifications of the shape of recess (12b) of the steering wheel (5) which forms a torque support positively engaged into the rim (14b) of the spoked wheel (7) disclosed by Nicot as the courts have held that a change in shape or configuration, without any criticality, is within the level of skill in the art as the particular shape claimed by Applicant is nothing more than one of numerous shapes that a person having ordinary skill in the art will find obvious to provide using routine experimentation based on its suitability for the intended use of the invention. See *In re Dailey*, 149 USPQ 47 (CCPA 1976). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ruge to include the limitations taught by Nicot in order to provide a relatively simple, compact and yet highly sensitive and accurate torque meter which is rigidly supported to the steering wheel.

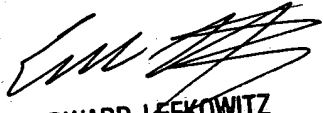
Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (5,753,828); (5,672,834); (5,195,383); (4,712,433).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Takisha Miller whose telephone number is (571) 272-2184. The examiner can normally be reached on Monday - Friday (7:00 am - 3:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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